

CLAIMS

1. A protein SPT described in following (A) or (B):

(A) A protein having an amino acid sequence shown in SEQ. ID No. 2 in the sequence listing.

(B) A protein consisting of an amino acid sequence comprising substitution, deletion, insertion, addition, or inversion of one or several amino acids in an amino acid sequence shown in SEQ. ID No. 2 in the sequence listing and having a function of enhancing acetic acid tolerance.

2. A DNA of a gene encoding the protein SPT described in following (A) or (B):

(A) A protein having an amino acid sequence shown in SEQ. ID No. 2 in the sequence listing.

(B) A protein consisting of an amino acid sequence comprising substitution, deletion, insertion, addition, or inversion of one or several amino acids in an amino acid sequence shown in SEQ. ID No. 2 in the sequence listing and having a function of enhancing acetic acid tolerance.

3. The DNA of a gene according to claim 2, that is a DNA described in following (a) or (b):

(a) A DNA that comprises a nucleotide sequence consisting of nucleotides 187 to 1386 shown in SEQ. ID No. 1 in the sequence listing within the nucleotide sequence.

(b) A DNA that hybridizes with a probe comprising a nucleotide sequence consisting of nucleotides 187 to 1386 shown in SEQ. ID No. 1 in the sequence listing within the nucleotide sequence or a part thereof under a stringent condition, and

encodes protein having a function of enhancing acetic acid tolerance.

4. A protein SPT2 described in following (A) or (B):

(A) A protein having an amino acid sequence shown in SEQ. ID No. 4 in the sequence listing.

(B) The protein SPT2 consisting of an amino acid sequence comprising substitution, deletion, insertion, addition, or inversion of one or several amino acids in an amino acid sequence shown in SEQ. ID No. 4 in the sequence listing and having a function of enhancing acetic acid tolerance.

5. A DNA of a gene encoding the protein SPT2 described in following (A) or (B):

(A) A protein having an amino acid sequence shown in SEQ. ID No. 4 in the sequence listing.

(B) The protein SPT2 consisting of an amino acid sequence comprising substitution, deletion, insertion, addition, or inversion of one or several amino acids in an amino acid sequence shown in SEQ. ID No. 4 in the sequence listing and having a function of enhancing acetic acid tolerance.

6. The DNA of a gene according to claim 5, that is a DNA described in following (A) or (B):

(A) A DNA that comprises a nucleotide sequence consisting of nucleotides 386 to 1636 shown in SEQ. ID No. 3 in the sequence listing within the nucleotide sequence.

(B) A DNA that hybridizes with a probe generated from a nucleotide sequence consisting of nucleotides 386 to 1636 shown in SEQ. ID No. 3 in the sequence listing within the

nucleotide sequence or a part thereof under a stringent condition, and encodes protein having a function of promoting growth rate.

7. Microorganisms, wherein acetic acid tolerance thereof is enhanced by amplifying intracellular copy number of the DNA according to any one of claims 2, 3, 5, or 6.

8. The microorganisms according to claim 7, wherein the microorganisms are acetic acid bacteria belonging to the genus *Acetobacter* or the genus *Gluconacetobacter*.

9. A method of producing vinegar, wherein microorganisms having alcohol oxidation ability among the microorganisms according to claim 7 or 8, are cultured on medium containing alcohol so that acetic acid is produced and accumulated in the medium.

10. A recombinant plasmid pUSPT (FERM BP-7932) including the DNA according to claim 2 or 3, or a recombinant plasmid pUSPT2 (FERM BP-8304) including the DNA according to claim 5 or 6.